

Section VIII —1997 Campus Comparable Improvement

Overview

The Comparable Improvement measure depends on campus comparison groups. Each campus will have a unique comparison group of 40 other campuses in the state that closely match the target school on a number of characteristics. Comparable Improvement groups are recreated each year to account for changes in demographics which may occur. They will be used for all group statistics reported on campus AEIS reports and the School Report Card.

Comparable Improvement in the public school accountability system:

is computed for TAAS reading and mathematics only, using students who can be matched by their student identification information to their results from a prior school year.

is a campus measure only.

Background

Comparable Improvement has been a statutory component of the accountability system since its design in 1993, but implementation was postponed until the 1995-96 school year when student-level TAAS growth measures became available.

Although the *Texas Education Code* defines the structure of the Texas public school accountability system, it delegates the operational decisions of applying such a system to the commissioner of education. Since the specifics of its definition and its application to the system are not codified, determining both the calculation method and application procedures of Comparable Improvement are the commissioner's responsibilities. *Texas Education Code* §39.051(c) defines Comparable Improvement and is reprinted in Section XIII, *Appendix I*.

Building Campus Comparison Groups

Characteristics Used

The characteristics used to construct the campus comparison groups include those defined in statute as well as others found to be statistically significant. The six campus-level characteristics used in 1996-97 are:

- percent of 1996-97 enrolled students identified as African American;
- percent of 1996-97 enrolled students identified as Hispanic;
- percent of 1996-97 enrolled students identified as White;
- percent of 1996-97 enrolled students identified as Economically Disadvantaged;
- percent of 1996-97 enrolled students identified as Limited English Proficient (LEP); and
- percent of mobile students as determined from 1995-96 cumulative attendance.

The characteristics analyzed to construct the campus comparison groups are defined below. Only ADA eligible students are counted in enrollment or membership for these calculations, which are rounded to one decimal place:

Characteristics	Calculation	Data Source
Percent African American	$\frac{\text{Number of African American Students Enrolled} \times 100}{\text{Campus Enrollment}}$	1996-97 PEIMS Submission 1
Percent Hispanic	$\frac{\text{Number of Hispanic Students Enrolled} \times 100}{\text{Campus Enrollment}}$	1996-97 PEIMS Submission 1
Percent White	$\frac{\text{Number of White Students Enrolled} \times 100}{\text{Campus Enrollment}}$	1996-97 PEIMS Submission 1
Percent Economically Disadvantaged	$\frac{\text{Number of Economically Disadvantaged Students Enrolled} \times 100}{\text{Campus Enrollment}}$	1996-97 PEIMS Submission 1
Percent LEP	$\frac{\text{Number of Limited English Proficient Students Enrolled} \times 100}{\text{Campus Enrollment}}$	1996-97 PEIMS Submission 1
Percent Mobile	$\frac{\text{Students in Campus Membership less than 83\% of Days Taught} \times 100}{\text{Students in Campus Membership}}$	1995-96 PEIMS Submission 3

How Groups Are Constructed

A unique comparison group of 40 campuses is identified for each school. The group is selected on the basis of the most dominant characteristics of the target campus. The order of dominance is determined by ranking the characteristics from highest to lowest percent. Only schools of similar type (elementary, middle, high school, or multi-level) form the selection pool.

Based on the most dominant characteristic for the target school from the six listed above, the 100 most similar campuses are selected. That group is further refined by the next most dominant feature, and so on, until 50 comparison campuses are identified. Finally, 10 campuses with the most dissimilar of the less predominant characteristics are eliminated to bring the group size to 40. Only the accountability student group characteristics — African American, Hispanic, White, and Economically Disadvantaged — are used for this final reduction from 50 to 40 campuses; the percent LEP and percent mobile students are not considered when eliminating the least predominant characteristics in this final step.

EXAMPLE:

Elementary Campus X: 19.8% Hispanic, 50.3% African American, 29.9% White, 40.4% Economically Disadvantaged, 12.0% LEP, 15.2% Mobile

- Step 1: 100 elementary campuses having percentages closest to **50.3% African American** students are identified.
- Step 2: 10 schools from the initial group of 100 are eliminated on the basis of being most distant from the value of **40.4% Economically Disadvantaged**.
- Step 3: 10 of the remaining 90 schools which are most distant from **29.9% White** students are eliminated.
- Step 4: 10 of the remaining 80 schools which are most distant from **19.8% Hispanic** students are eliminated.
- Step 5: 10 of the remaining 70 schools which are most distant from **15.2% Mobile** students are eliminated.
- Step 6: 10 of the remaining 60 schools which are most distant from **12.0% LEP** students are eliminated.
- Step 7: 10 of the remaining 50 schools which are most distant from 29.9% White students and / or 19.8% Hispanic students are eliminated.

The final group size is 40 schools.

How CI Groups Are Built (cont.)

There is no limit to the number of comparison groups to which a school may be a member. It is theoretically possible for a school to be a member of no comparison group other than its own, or all of them within a particular school type (e.g. high school).

Performance Measured for Comparable Improvement

According to statute, Comparable Improvement must be calculated for assessment results only, specifically for the TAAS. Comparable Improvement measures are based on analysis of growth on the Texas Learning Index (TLI), derived from the TAAS reading and mathematics tests only, given at grades 3 through 8, and 10.

Students to Be Included

Growth measures based on the TLI in reading and mathematics are determined for those students who took the test(s) in the current and prior years. The methodology for identifying matched students in 1997 is detailed below. The matching is not limited by the grade level of the student in the prior year; retained as well as promoted students can be part of the set of matched students.

Grades 4 - 8

Students tested in the spring 1997 TAAS administrations on reading and / or mathematics who:

- are in grades 4, 5, 6, 7 or 8;

- are part of the 1997 accountability subset (non-special education students enrolled in the district as of October 25, 1996);

- can be matched back to the spring 1996 TAAS administration in grades 3, 4, 5, 6, 7, or 8, all students not in special education, anywhere in the state; and

- scored less than a TLI of 85 on the spring 1996 TAAS administration. **[NEW!]**

Grade 10

Students tested in the spring 1997 TAAS administrations on reading and / or mathematics who:

are in grade 10;

are part of the 1997 accountability subset;

can be matched back to the spring 1995 or spring 1994 grade 8 TAAS administration, all students not in special education, anywhere in the state; and

scored less than a TLI of 85 on the prior year TAAS administration, whether that is 1995 or 1994. **[NEW!]**

Grade 3

Students tested in the spring 1997 TAAS administrations on reading and mathematics in grade 3 cannot contribute to 1997 Comparable Improvement.

NOTE: Campuses without TAAS results at grades 4 through 8 or 10 are paired in order to calculate Comparable Improvement. The exception is campuses serving grades pre-kindergarten and / or kindergarten only; those schools are not required to be rated in the accountability system. (Refer to Section V, *Special Issues and Exceptions* for details on pairing.)

Growth on the Texas Learning Index

Comparable Improvement measures are based on analysis of TLI growth for all matched students in reading and mathematics. The measures take several steps to compute; the process begins with student-level calculations which are then aggregated to the campus level, and those results finally are analyzed within the comparison group.

Step 1: Student TLI Growth

A Texas Learning Index score is preceded by a digit representing the grade tested — 3, 4, 5, 6, 7, 8, or X (for exit). For example, a student with a TLI mathematics score of 4-78 earned a TLI score of 78 on the 4th grade mathematics TAAS. The top and bottom end of the score range may differ from subject to subject, depending on how much easier or harder the test is at any particular administration. Within a subject, TLIs can be compared to determine the growth between the years tested.

Step 1 (cont.)

Matched students for reading and matched students for mathematics are separately identified. For each matched student, the TLI growth calculation is illustrated below:

$$\text{TLI Growth (Mathematics)} = \text{Current year Mathematics TLI} - \text{Prior Year Mathematics TLI}$$

$$\text{TLI Growth (Reading)} = \text{Current year Reading TLI} - \text{Prior Year Reading TLI}$$

A TLI growth of zero means that one year's growth has occurred. A negative value means that less than one year's growth has occurred and a positive value means that more than one year's growth has occurred.

Examples of the reading calculation for two sixth grade students are provided:

EXAMPLE: JILL

$$(6-65) - (5-55) = (+10)$$

Jill's performance
in Spring 1997

Jill's performance
in Spring 1996

TLI
Growth

Although Jill did not pass reading either year (a score of 70 is passing), she did show more than one year's growth.

EXAMPLE: JACK

$$(6-75) - (5-80) = (-5)$$

Jack's performance
in Spring 1997

Jack's performance
in Spring 1996

TLI
Growth

Jack, on the other hand, passed both years, but he showed negative growth.

Step 2: Campus Average TLI Growth.

For each subject, the student TLI growth values are aggregated to the campus level to create a TLI Average Growth (TAG) for each campus. The calculations, rounded to two decimal places, are illustrated below:

$$\text{TAG (Reading)} = \frac{\text{Sum of Matched Student TLI Growth Values for Reading}}{\text{Total Number of Matched Students in Reading}}$$

$$\text{TAG (Mathematics)} = \frac{\text{Sum of Matched Student TLI Growth Values for Mathematics}}{\text{Total Number of Matched Students in Mathematics}}$$

Step 3: Quartile Distribution of Growth

Within the comparison group, TAG values are ranked to determine the quartiles. Each campus is separately assigned one of the following quartile values for reading and for mathematics:

- Q1 (top 25 percent);
- Q2 (in the top 50 percent, but not in the top 25 percent);
- Q3 (in the bottom 50 percent, but not in the lowest 25 percent);
- Q4 (lowest 25 percent).

Since campuses have a comparison group of 40 schools, usually 10 will comprise each quartile. For each subject, those in Q1 are the 10 schools with the highest TAG within the group; those in Q4 are the 10 schools with the lowest TAG. The number of schools in each quartile can differ if TAG values are tied near the quartile separation points, or if some schools do not meet small numbers criteria.

Each school is assigned two quartile values, one for reading and one for mathematics, depending on where the TAG falls in the distribution of its unique set of 40 comparison schools. These are the Comparable Improvement measures for the target campus.

The quartile value of any school in a comparison group is appropriate only for that comparison group.

A school which is a member of multiple comparison groups could have different quartile values for the same performance because that determination depends on the performance of the other schools in each group. Only the quartile values for the target school are used for Comparable Improvement.

SMALL NUMBERS: A campus must have at least 10 matched students in a subject to receive a quartile value. A target campus is not assigned a quartile value when fewer than 24 campuses in the comparison group meet the minimum matched students criteria. (See Section V, *Special Issues and Exceptions* for small numbers.)

Step 4: Other Reported TLI Measures.

The Comparable Improvement Report will present other TLI-based measures for each comparison group of 40 schools. For each subject, the percent of matched students excluded because they had a TLI at or above 85 in the prior year, and the percent of matched students meeting or exceeding a growth standard of 5 TLI points will be calculated and reported.

Step 4 (cont.)

The first calculation indicates the percent of total matched students who were excluded from the campus TAG calculations and Comparable Improvement analysis. The second calculation indicates what percent of those matched students included in the TAG calculations made a specified level of growth on the TLI. The calculations, rounded to one decimal place, are illustrated below:

HIGH-PERFORMING STUDENTS *(based on total matched students)*

$$\text{Percent of High Performing Students (Mathematics)} = \frac{\text{Count of Matched Students with a Prior Year TLI value } \geq 85 \text{ for Mathematics}}{\text{Total Number of Matched Students in Mathematics}}$$

$$\text{Percent of High Performing Students (Reading)} = \frac{\text{Count of Matched Students with a Prior Year TLI value } \geq 85 \text{ for Reading}}{\text{Total Number of Matched Students in Reading}}$$

GROWTH STANDARD *(based on matched students scoring a TLI < 85 in the prior year)*

$$\text{Percent Meeting Growth Standard (Mathematics)} = \frac{\text{Count of Matched Students with TLI Growth Values } \geq 5.0, \text{ for Mathematics}}{\text{Matched Students Scoring a TLI } < 85 \text{ in Mathematics}}$$

$$\text{Percent Meeting Growth Standard (Reading)} = \frac{\text{Count of Matched Students with TLI Growth Values } \geq 5.0, \text{ for Reading}}{\text{Matched Students Scoring a TLI } < 85 \text{ in Reading}}$$

Rationale for Exclusions

The Texas Learning Index upon which Comparable Improvement is based is least sensitive to exceptionally high or low performance. This is a direct consequence of the criterion-based design of the TAAS program. Criterion-referenced tests are constructed to determine an individual's level of performance on specific content. Examinees pass or fail a criterion-referenced test. In contrast, norm-referenced tests are designed to determine where a person stands relative to a population of examinees on the content being tested.

**Rationale for
Exclusions
(cont.)**

Because criterion-referenced tests are not designed to measure the full extent of one's skills or knowledge, there are inherent "floors" and "ceilings" in the scores one can obtain. Therefore, growth measures when overall performance is exceptionally high or low are likely not very reliable indicators of either performance problems or improvement.

HIGH PERFORMERS.

Growth for students scoring a TLI of 85 or above in the first year of the comparison is difficult to measure; therefore the performance of these students is excluded from the calculation of campus average TAGs. Statewide, average TLI growth between 1995 and 1996 was negative when the prior year score was 85 or above. Exclusion of these high performers should increase the average TLI growth for campuses.

LOW PERFORMERS.

To address the measurement problems of the lowest performing students, matched students receiving the minimum possible score in either year are excluded from the CI analysis. This action impacts very few students; in 1996, fewer than 500 out of 1.1 million in each subject were excluded.

1997 Comparable Improvement Reports

A Comparable Improvement report will be included with each campus Academic Excellence Indicator System report in the fall of 1997. The report includes two pages of information: the demographic characteristics used to determine the comparison groups, and the TLI growth measures. Samples of these reports are included for illustration on pages 60-61.

Section VIII - 1997 Campus Comparable Improvement

1997 Accountability Manual

Sample 1997 CI Report: Side 2 - Performance Growth

TARGET CAMPUS NAME: SAMPLE H S
TARGET CAMPUS #: 999999001
DISTRICT NAME: SAMPLE ISD
CAMPUS TYPE: SECONDARY SCHOOL

TEXAS EDUCATION AGENCY 1996-97 COMPARABLE IMPROVEMENT

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This listing is in campus ID number order, as is Side 1.

(3) 1996 Campus TLI Average: The sum of the 1996 TLI values of matched students, divided by the number of matched students.

(4) Percent of Matched Students with TLI Growth of 5 or more: The sum of matched students whose TAAS performance improved by 5 or more points from 1996 to 1997, divided by the number of matched students.

(5) Percent of All Matched Students Scoring a TLI 85 in Prior Year: The sum of matched students whose TLI in 1996 was 85 or more, divided by the number of all matched students (including those whose TLI was 85 or more).

(1) Number of Matched Students: Those students at each campus whose TAAS results can be found in both 1997 and 1996, and whose TLI was 84 or less in 1996.

(2) 1997 Campus TLI Average: The sum of the 1997 TLI values of matched students, divided by the number of matched students.

(6) TLI Average Growth (TAG): The 1996 Campus TLI (column 3) subtracted from the 1997 Campus TLI (column 2). Note: due to rounding, some TAG values will be slightly different.

(7) Quartile Position within the Comparison Group for TAG: The TAG values in column 6 are sorted from highest to lowest for the 40 campuses in the comparison group. Then four quartiles (Q1, Q2, Q3, & Q4) are assigned, with 10 campuses in each. Campuses in Q1 have shown the greatest improvement in TAAS performance from 1996 to 1997.

Target Campus
(identified by asterisk)

CAMPUS NAME	READING							MATH						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	NUMBER MATCHED STUDENTS	1997 AVG TLI	1996 AVG TLI	% > 5 PTS GROWTH	% >= 85 ON 96 TLI	TLI AVG GROWTH	QUAR-TILE	NUMBER MATCHED STUDENTS	1997 AVG TLI	1996 AVG TLI	% > 5 PTS GROWTH	% >= 85 ON 96 TLI	TLI AVG GROWTH	QUAR-TILE
ANDREWS H S	88	74.60	72.99	40.9	48.5	1.61	Q3	144	70.15	71.38	18.1	15.3	-1.23	Q4
ELGIN H S	61	73.75	72.33	32.8	45.5	1.43	Q3	97	76.34	70.36	49.5	15.7	5.98	Q1
BARTLETT H S	50	70.82	70.20	40.0	39.8	0.62	Q4	72	67.07	68.50	19.4	13.3	-1.43	Q4
LULING H S	51	75.33	73.06	37.3	40.0	2.27	Q3	73	70.42	68.38	34.2	16.1	2.04	Q3
NEW BRAUNFELS H S	127	74.37	73.40	28.3	55.6	0.97	Q4	285	72.33	72.39	21.3	23.2	-0.06	Q4
N GARLAND H S	164	76.85	74.95	32.3	47.4	1.90	Q3	251	74.10	73.10	29.9	18.8	1.00	Q3
ING H S	110	78.48	74.34	45.5	57.0	4.15	Q1	183	73.36	73.22	27.3	30.2	0.14	Q3
ARTHUR H S	143	80.50	75.35	49.7	52.5	4.95	Q1	224	76.80	73.97	31.3	25.8	2.63	Q2
ITZ H S	147	78.33	76.30	38.1	50.5	2.03	Q3	230	75.66	72.82	22.6	22.6	2.83	Q2
HARDSON H S	170	78.88				6.77	Q1	248					1.79	Q3
IS H S	98	75.16				0.55	Q4	134					-2.98	Q4
RIS H S	36	77.08				1.92	Q3	60					2.47	Q2
NKLIN H S	164	80.32				5.41	Q1	292					3.51	Q1
ONIA H S	46	73.24				0.87	Q4	56					1.93	Q3
NOLE H S	54	72.09				-1.15	Q4	88					1.74	Q3
SALES H S	70	75.59				1.36	Q4	104					2.24	Q2
PHIS H S	15	80.07				3.47	Q2	23					5.57	Q1
NNELVIEW H S	126	75.85				4.06	Q2	168					4.79	Q1
SHAM CREEK H S	251	78.41	74.35	44.2	49.0	4.06	Q2	382					2.59	Q2
RLING H S	192	76.57	73.92	40.1	55.8	2.65	Q2	335	73.42	71.26	34.6	23.2	2.16	Q2
DOBIE H S	185	75.58	73.77	33.0	52.6	1.81	Q3	325	72.27	71.03	28.6	17.1	1.24	Q3
BIG SPRING H S	103	77.20	72.83	44.7	49.5	4.38	Q1	163	73.45	71.21	30.7	22.4	2.23	Q2
GEORGE WEST H S	50	76.90	73.36	38.0	33.3	3.54	Q2	61	76.80	68.51	63.9	18.7	8.30	Q1
STANTON H S	18	74.72	71.33	27.8	53.8	3.39	Q2	33	76.85	74.27	39.4	19.5	2.58	Q2
BAY CITY H S	154	72.71	69.17	43.5	35.8	3.55	Q2	205	73.50	67.28	48.3	15.6	6.21	Q1
DEVINE H S	67	77.18	68.91	59.7	41.2	8.27	Q1	91	76.27	71.38	50.5	20.2	4.89	Q1
LEE FRESHMAN H S	301	75.69	72.32	38.2	48.0	3.37	Q2	456	72.40	69.36	36.6	21.6	3.03	Q2
MIDLAND FRESHMAN H S	297	74.66	71.94	37.4	44.2	2.72	Q2	442	69.66	68.86	24.9	19.2	0.80	Q3
YOE H S	59	73.02	70.46	27.1	40.4	2.56	Q3	91	70.11	67.99	24.2	7.1	2.12	Q3
H S	87	71.87	72.48	23.0	45.6	-0.61	Q4	133	70.63	71.98	20.3	17.9	-1.35	Q4
H S	68	77.54	74.24	44.1	43.8	3.31	Q2	106	71.50	68.95	34.0	14.5	2.55	Q2
H S	15	75.20	68.93	53.3	51.6	6.27	Q1	28	73.86	67.50	42.9	9.7	6.36	Q1
H S	21	78.00	77.29	47.6	58.0	0.71	Q4	33	72.64	76.73	6.1	35.3	-4.09	Q4
SONORA H S	27	74.78	73.52	33.3	50.0	1.26	Q4	48	71.54	73.21	10.4	15.8	-1.67	Q4
TULIA H S	31	77.03	72.10	38.7	42.6	4.94	Q1	49	76.10	71.45	44.9	10.9	4.65	Q1
SAMPLE H S	117	77.70	72.32	47.9	59.9	5.38	Q1	217	74.80	71.89	33.6	26.9	2.90	Q2
RANKIN H S	26	78.31	75.88	38.5	58.1	2.42	Q3	42	76.71	75.05	23.8	33.3	1.67	Q3
EL CAMPO H S	134	71.32	69.65	35.1	34.3	1.67	Q3	176	65.68	66.60	20.5	15.0	-0.93	Q4
TAYLOR H S	62	76.10	75.65	27.4	38.6	0.45	Q4	76	72.45	72.36	22.4	24.0	0.09	Q4
FLORESVILLE H S	89	78.16	72.69	46.1	36.0	5.47	Q1	119	74.61	69.66	49.6	16.2	4.95	Q1
DENVER CITY H S	56	77.36	72.84	39.3	41.1	4.52	Q1	81	69.15	72.27	14.8	17.3	-3.12	Q4

2) 1997 Campus TLI Average: The sum of the 1997 TLI values of matched students, divided by the number of matched students.

6) TLI Average Growth (TAG): The 1996 Campus TLI (column 3) subtracted from the 1997 Campus TLI (column 2). Note: due to rounding, some TAG values will be slightly different.

Campus (by asterisk)

NOTE: ALL VALUES ARE BASED ON STUDENTS WHO CAN BE MATCHED FROM CURRENT TO PRIOR YEAR TAAS. VALUES IN COLUMNS 1, 2, 3, 4, 6, AND 7 ARE BASED ON THOSE MATCHED STUDENTS WITH A TLI OF 84 OR LESS IN THE PRIOR YEAR. VALUES SHOWN IN COLUMN 5 ARE BASED ON ALL MATCHED STUDENTS IN THE PRIOR YEAR. CURRENT YEAR IS 1997 WHILE PRIOR YEAR IS 1996 FOR GRADES 3 - 8, AND 1995 FOR GRADE 10 (EXIT-LEVEL).

